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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,949	07/28/2003	Dan Gavish	42P10060D	6162
8791	7590	03/19/2004	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD, SEVENTH FLOOR LOS ANGELES, CA 90025			HASSANZADEH, PARVIZ	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/628,949	GAVISH, DAN	
	Examiner	Art Unit	
	Parviz Hassanzadeh	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 6-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/03</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-5, in Paper No. 2/2/04 is acknowledged.

Claims 6-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group II, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 2/2/04.

Specification

The disclosure is objected to because of the following informalities: it is suggested to update the information regarding the parent applications recited on page 1 by including "now US Patent No. 6,638,580".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al (US Patent No. 5,120,925) in view of Marsh (US Patent No. 6,660,631 B1).

Ohnishi et al teach a system (Figs. 2, 3) comprising:

a chamber housing a substrate 200;

an ion beam 100 (energy source) coupled to the chamber;

a system controller 550 to control introduction of metal precursor gas 110 to a focus ion beam 1 and to control the ion beam generating unit, wherein the computer 500 includes a memory having computer-readable program for controlling the operation of the system; and

a metal precursor source 100 and a precursor gas source 110 coupled to an inlet 108 as shown in Fig. 3, wherein the precursor gas source is a gas containing a metal element and being introduced in the vicinity of the substrate (column 1, lines 13-29; column 3, lines 9-28; and column 10, lines 45-51).

Ohnishi et al fail to teach the metal source including at least two metal constituents.

Marsh teaches an apparatus for forming a film on a semiconductor substrate, where the apparatus includes a plurality of precursor metal gas sources as shown in Figs. 2 and 3 so that a composite film containing more than one metal element is formed on the substrate surface (abstract, column 12, line 38 through column 13, line 49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the precursor metal gas source as taught by Marsh in the apparatus of Ohnishi et al in order to form a composite film comprising at least two metal element.

Further regarding claim 2: The type of the metal used for deposition is considered a process limitation rather than structural limitations and the apparatus as discussed above is capable of being utilized for forming, for example, a composite film including Co, Mo and W.

The particular type of gas used is a process limitation rather than an apparatus limitation, and the recitation of a particular type of gas does not limit an apparatus claim, see *In re Casey*, 152 USPQ 235; *In re Rishoi*, 94 USPQ 71; *In re Young*, 25 USPQ 69; *In re Dulberg*, 129 USPQ 348; *Ex parte Thibault*, 64 USPQ 666; and *Ex parte Masham*, 2 USPQ2d 1647. This rejection is based on the fact the apparatus structure taught by prior art has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on the inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112)

Further regarding claims 3-5: It has been held that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danley*, 120 USPQ 528, 531, (CCPQ 1959); "Apparatus claims cover what a device is, not what a device does" (Emphasis in original) *Hewlett-Packard Co. V. Bausch & Lomb Inc.*, 15USPQ2d 1525, 1528 (Fed. Cir. 1990); and a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Also see MPEP 2114.

Further regarding claims 2-5: It is held *in re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) that a mere duplication of parts has no patentable significance unless a new and unexpected result is produced therefore it would have been obvious to one of ordinary skill in the

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art at the time the invention was made to include a plurality of metal precursor gases in order to introduce different metal precursor gases into the chamber separately or simultaneously as desired.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tao et al (US Patent No. 5,104,684) teach an ion beam metal deposition system;

Azuma et al (US Patent No. 5,976,328) teach an ion beam processing system wherein the surface of a metal film is *heated by a radiation source* (column 7, lines 24-68).

Drummond et al (US Patent No. 5,132,248) teach an apparatus for forming a metal deposition on the surface of a substrate, wherein the *metal layer on the substrate is annealed by a radiation light source such as a laser source, and wherein the metal may be W or Mo* (Fig. 1; column 3, lines 65-68; column 5, lines 27-37).


Kaloyeros et al (US Patent No. 6,534,133 B1), *Lee et al (US Patent No. 5,827,571)*, and *Kanai et al (US Patent No. 4,800,173)* teach a film forming apparatus including *a plurality precursor material sources coupled to the deposition chamber*.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parviz Hassanzadeh whose telephone number is (571)272-1435. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571)272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Parviz Hassanzadeh
Primary Examiner
Art Unit 1763

March 11, 2004